BULLETIN

OF THE

TORREY BOTANICAL CLUB.

Vol. 24. Lancaster, Pa., October 30, 1897. No. 10.

New species of Fungi from various Localities.

By J. B. Ellis and B. M. Everhart.

Puccinia luteobasis E. & E.

On some umbelliferous plant, Dillon, Colo., June, 1897. (Bethel, no. 319.)

On the petioles and on the lower side of the leaves, the parts affected being slightly swollen and of a bright, light yellow color. Sori small, about ½ mm., orbicular, scattered on the yellow spots, chestnut-color, at first immersed, soon erumpent and surrounded by the ruptured epidermis which forms a little cup, enclosing them with the semblance of an *Aecidium*; spores oblong-elliptical, yellow-brown, more or less irregular, rounded or obtusely pointed or even flattened at the summit, mostly rounded also at the base, slightly constricted, epispore smooth, not thickened above, contents granular, 20–32×15–20 μ; pedicels hyaline, about as long as the spores.

Ustilago funalis E. & E.

U. Sporoboli E. & E. Bull. Torr. Bot. Club, **24**: 282. 1897.

Investing the culms with a thin, olivaceous coat of globose light-brown spores about 5 μ diam., extending continuously from one node to another.

We have changed the specific name "*Sporoboli*" to "*funalis*" on account of the homonymous *U. Sporoboli* Tracy & Earle, which takes precedence, but is a very different thing from this.

This same *Ustilago* (*U. funalis*) also occurs on *Oryzopsis cuspidata* in Colorado (Bethel, no. 279).

PYRENOMYCETES.

Hypocrea aurantio-cervina E. & E.

On bark, Louisiana (Langlois), Comm. C. G. Lloyd, no. 3049.

Stroma effused, orbicular, 1–2 cm. diam., thin (1 mm. or less), orange-red when fresh, stag-color when dry, with a pale-red layer just beneath the surface, the lower layer slaty black, margin appressed; perithecia in a single layer, oblong-elliptical, 300×200 μ, black, crowded, seated on the black, carnose basal layer, their minute punctiform ostiola barely visible under the lens as black dots in the surface of the stroma; asci slender, p. sp. 50–55×5–6, or including the slender stipe, 100–110 μ long; sporidia uniseriate, subnavicular, brown, obtuse, 2-nucleate, 7–9×3–3½ μ, mostly overlapping.

From *H. bicolor* E. & E. it differs in the character of the stroma and smaller perithecia.

Thyronectria sambucina E. & E.

On dead stems of *Sambucus*, Buena Vista, Colo., June, 1897. (Bethel, no. 315 *a*.)

Perithecia 6–12 in a cortical stroma, globose, about ⅓ mm. diam., brown and coriaceous, their minute papilliform inconspicuous ostiola united in a flat or slightly concave dark-brown disk which raises the whitened epidermis into distinct pustules and soon bursts through it; asci cylindrical, p. sp. 130–150×18–20 μ, 8-spored, short-stipitate, with abundant but evanescent filiform paraphyses; sporidia uniseriate, oblong-elliptical, about 7-septate, and muriform, slightly constricted in the middle, straw-yellow, 20–25×12–14 μ.

In company with *Coryneum sambucinum* E. & E. and *Tubercularia Sambuci* Cda.

Sordaria ostiolata E. & E.

On rabbit's dung, Rooks County, Kansas, August, 1897. (Bartholomew, no. 2424.)

Perithecia scattered, immersed, then semiemergent, glabrous, ovate, brown, 200–250 μ diam., the black, conical or short-cylindrical ostiolum erumpent; asci cylindrical, short-stipitate, paraphysate, 80–190×12 μ, 8-spored; sporidia uniseriate, elliptical, 12–15×8–10 μ.

Allied to *S. leucoplaca* B. & R. but asci and sporidia larger.

Melanopsamma alpina E. & E.

On decaying spruce wood, San Juan Mountains, Colorado, July, 1897. (Bethel, no. 352 partly.)

Perithecia erumpent-superficial, gregarious, depressed-globose, ¼ to ½ mm. diam., thin walled and rather fragile, with an obscure or papilliform ostiolum; asci clavate-cylindrical, 75–85×8–10 μ, paraphysate, 8-spored; sporidia overlapping-uniseriate, or subbiseriate, fusoid-navicular, 3–4-nucleate, hy aline, constricted-uniseptate in the middle, 15–20×3½–4 μ.

Allied to *M. boreale* E. & E. and, like that species, having perithecia quite variable in size, but distinguished by its differently shaped and narrower sporidia.

TEICHOSPORA OPUNTIAE E. & E.

On dead stems of *Opuntia arborescens*, Pueblo, Colo., July, 1897. (Bethel, no. 3299.)

Perithecia superficial, scattered or gregarious, ovate, small (¼ mm. or a little over), minutely roughened, except the papilliform or conic-papilliform smooth, black ostiolum; asci cylindrical, short-stipitate, 8-spored, 75–80×9–10 μ; sporidia uniseriate, obovate-elliptical, 3-septate, scarcely constricted unless at the middle septum, one or two of the cells divided by a longitudinal septum, brown, 12–14×5½–6 μ.

The perithecia are about the same as in *Cucurbitaria minima* E. & E. but scattered, and the sporidia are smaller and quite constantly only 3-septate.

TEICHOSPORA INFUSCANS E. & E.

On an old cottonwood log, Rooks County, Kansas, August, 1897. (Bartholomew, no. 2422.)

Perithecia gregarious in elongated groups, blackening the surface of the wood, erumpent-superficial, subhemispherical, collapsing to cup-shape, 110–200 μ diam., with a distinct papilliform ostiolum; asci clavate-cylindrical, short-stipitate, paraphysate; sporidia biseriate, narrow, oblong-elliptical, very slightly curved, a little narrower below, 3–5-(exceptionally 6–7) septate, scarcely or only slightly constricted, with a longitudinal septum running through one or more of the cells, pale yellowish brown, 18–22×6–8 μ.

Differs from *T. pygmaea* E. & E. in its gregarious habit and collapsed perithecia.

TEICHOSPORA STRIGOSA E. & E.

On dead branches of *Symphoricarpus*, Baldwin, Colo., June, 1897. (Bethel, no. 274.)

Perithecia superficial, gregarious, globose, ⅓ mm. diam., collapsing above, clothed, especially below, with brown spreading hairs; asci cylindrical, short-stipitate, paraphysate, 8-spored, 100–110×12–15 μ; sporidia subbiseriate, oblong- or ovate-elliptical, yellow, 5–7-septate, with a longitudinal septum running through most of the cells, often constricted in the middle but not at the other septa, 20–27×11–13 μ.

Differs from *T. crossata* E. & E. in its much larger, 5–7-septate sporidia and strigose coat.

Cucurbitaria Quercina E. & E.

On dead limbs of *Quercus undulata*, Greenhorn, Pueblo Co., Col., July, 1897. (Bethel, no. 337.)

Perithecia gregarious or subcespitose, seated on the bare wood or erumpent through cracks in the bark, depressed-globose, inclining to ovate-globose, 400–500 μ diam., minutely roughened, becoming slightly collapsed around the papilliform ostiolum, so as to appear flattened above; asci short-stipitate, cylindrical, paraphysate, 8-spored; sporidia uniseriate, ovate-elliptical, 3–5-septate, sometimes constricted in the middle, yellow-brown, 18–20× 8–10 μ.

Cucurbitaria minima E. & E.

On dead stems of *Artemisia tridentata*, near Gunnison, Colo., June, 1897. (Bethel 311*c*.)

Perithecia subcespitose, 3–6 together, or subseriate, small, about ⅓ mm., ovate-conical, often with 1–4 furrows or grooves extending from the apex down; ostiolum papilliform; asci cylindrical, short-stipitate, paraphysate, 8-spored, 75–85×10–12 μ; sporidia overlapping, uniseriate, oblong, 5–7-septate, scarcely or only slightly constricted, straight, 18–20×6–7 μ.

Lophiotrema incisum E. & E.

On dead shoots of *Ribes prostratum*? Empire, Colorado, May, 1897. (Bethel, no. 257 *a*.)

Perithecia thickly scattered, sunk in the bark with the cleft or quadrisulcate apex erumpent in a small tubercle, white and solid inside, 300–350 μ diam., often 2–3 lying close together and covered by the same tubercle, not penetrating to the wood; ostiolum subcompressed; asci cylindrical, 75–100×10–12 μ, short-stipitate, paraphysate; sporidia uniseriate or quite as often biseriate, cylindrical, obtuse, 3–4-nucleate, constricted between the nuclei, uniseptate and more deeply constricted in the middle, 15–20×5–6 μ.

Approaches *Dothidea* and *Didymella*.

SPHAERELLA STENOSPORA E. & E.

On dead stems of *Sphaeralcea*? northern Colorado, July, 1897. (Baker, no. 413.)

Perithecia erumpent, abundant, thickly scattered over the stems, 100–150 μ diam., perforated above; asci oblong, 45–55×10–15 μ, short-stipitate, often swollen on one side towards the base; sporidia biseriate, oblong-fusoid, uniseptate, scarcely or not at all constricted, 14–16×3–4 μ.

This comes near *S. spinarum* Awd., but besides the peculiar habitat of that species, the sporidia in the fig. in Rab. Mycol. Eur. are represented as distinctly curved, while in the present species they are straight. *S. Vincetoxici* Sacc. has sporidia oblong-clavulate.

SPHAERELLA (DERMATOSTROMA) FRIGIDA E. & E.

On bleached limbs and weather-beaten wood, San Juan Mountains, Colo., July, 1897. (Bethel, no. 361.)

Perithecia globose, subastomous, black, membranous, 100–110 μ diam., seated on a thin white membrane overspreading the surface of the host; asci clavate-cylindrical, 35–40×8–10 μ, subsessile, aparaphysate, 8-spored; sporidia biseriate, fusoid-oblong, uniseptate and slightly constricted, straight or very slightly curved, obtuse, 12–15×3½–4½ μ, smoky-hyaline.

Differs from the usual type of *Sphaerella* in the membranous stroma.

LEPTOSPHAERIA MICROSPORA E. & E.

On dead stems of *Lespedeza capitata*, London, Canada, August, 1897. (Dearness, no. 2474.)

Perithecia scattered or loosely gregarious, subcuticular, depressed-globose; 150–250 μ diam., subcollapsing, with a papilliform ostiolum; asci clavate-cylindrical, sessile, paraphysate, 55–60×7–8 μ; sporidia subbiseriate, narrow-elliptical, 1–3-septate, slightly constricted, 10–12×3–3¼ μ.

The sporidia are oftener only 1-septate, in this respect approaching *Didymosphaeria*.

LEPTOSPHAERIA MONTICOLA E. & E.

On dead leaves and petioles of *Trifolium Kingii*, San Juan Mountains, Colorado, altitude 10,000 feet, July, 1897. (Bethel, no. 388.)

Perithecia covered by the epidermis which is raised into distinct pustules pierced by the papilliform conical or short-cylindrical ostiolum, 300–400 μ diam., membranous, black; asci oblong-clavate, mostly curved, paraphysate, 8-spored; sporidia fasciculate, cylindric-fusoid, 5–7-septate, scarcely constricted, second cell from the upper end moderately swollen, 45–55×7 μ.

EUTYPELLA SARCOBATI E. & E.

On dead stems of *Sarcobatus vermiculatus*, Alamosa, Colorado, July, 1897. (Prof. E. Bethel, no. 324.)

Stroma cortical, orbicular, 1½ mm. diam., circumscribed by a narrow black line, the surface of the wood being also blackened; perithecia 3–8, sunk to the wood, globose, ½mm. diam., with coriaceous walls, black and shining inside, contracted abruptly into slender necks enlarged above into the erumpent, connate conical quadrisulcate ostiola; asci (p. sp.) clavate cylindrical, 25–30×4–5 μ; sporidia subbiseriate, allantoid, curved, hyaline, 4–5×1–1¼ μ.

VALSARIA COLORADENSIS E. & E. Am. Nat. 342. 1897, is a synonym of *V. allantospora* E. & E. Proc. Phil. Acad. 343. 1894, and *Asteroma ivaecolum* E. & E. is the same as *A. infuscans* E. & E. Proc. Phil. Acad. 431. 1895, N. A. F. 3359.

In Bull. Torr. Club, 285, 1897, change *Phyllostucta Eucalypti* E. & E. to *Phyllosticta extensa* E. & E. on account of the homonymous species of Thümen, Contr. Fl. Lusit, no. 374, from which the California species differs in its amphigenous growth and larger sporules.

HYSTEROGRAPHIUM INCISUM E. & E.

On dead limbs of *Rhus aromatica*, Gunnison, Colo., June, 1897, (Bethel, no. 289.)

Perithecia oblong, partly sunk in the wood, lying parallel, 1–2×1 mm., ends subacute, sides faintly longitudinally striate, lips closed, leaving a slight furrow between them; asci oblong-cylindrical, short-stipitate, paraphysate, 8-spored, 75–80×12–13 μ; sporidia biseriate, ovate-oblong or ovate-elliptical, brown, 3–4-septate, with or without a partial longitudinal septum, 18–20×5–7 μ. Many of the perithecia have a transverse furrow across the middle as if cut across with a knife.

HYSTEROGRAPHIUM INSIDENS (Schw.)

On weatherbeaten wood of spruce, San Juan Mountains, Colorado, July, 1897. (Bethel, 352 partly.)

Perithecia gregarious, mostly lying parallel, elliptical, 1×½ mm. or sometimes elongated (by confluence?), 2–3 mm. long, lips partially open, sides faintly striate; asci oblong, short-stipitate, 75–90×15–20 μ; sporidia crowded-biseriate, oblong-fusoid, 7–10-septate, mostly constricted near the middle, one or more of the cells divided by a longitudinal septum, 26–40×8–12 μ.

This is certainly *Hysterographium* and probably not distinct from *H. elongatum* (Wahlenb.), and was so considered by Fries.

APOSPHAERIA CONDENSATA E. & E.

On dead stems of *Bigelovia*, Colorado, July, 1897. (Prof. E. Bethel.)

Perithecia superficial, densely gregarious so as to form here and there an almost continuous crust, depressed-globose, 150–250 μ, diam., with a broad-papilliform black shining ostiolum, the smaller ones collapsing; sporules minute, allantoid, hyaline, 2½–3×½–¾ μ.

A. allantella Sacc. has sporules 5–6×1–1½ μ. *A. alpigena* E. & E. has sporules 3–3½×1½ μ and the perithecia do not collapse.

HYPODERMA ABIETINUM E. & E.

On decorticated limbs of *Abies*, San Juan Mts., Colo., July, 1897. (Bethel, no. 351.)

Gregarious, elliptical, rough, ¾–1¼×½–¾ mm., lips partially closed; asci clavate, 100–110×8–10 μ; paraphyses linear, mostly curved at the tips; sporidia narrow-fusoid, nucleate, slightly curved, hyaline, 20–22×1½–2 μ.

SPHAEROPSIS COMPTONIAE E. & E.

On dead stems of *Comptonia*, Newfield, N. J., summer and autumn, 1897.

Perithecia buried in the inner bark, ovate-globose, acutely papilliform, ¼–⅓ mm. diam., either gregariously scattered with their apices barely erumpent, or crowded in transverse cracks of the bark, forming rings partly or entirely surrounding the stem with the perithecia semi-erumpent; sporules oblong-elliptical, brown, 16–22×8–12 μ, occasionally imperfectly septate, but very indistinctly so.

PYRENOCHAETA GRAMINIS E. & E.

On dead leaves of *Chloris verticillata*, Rooks County, Kansas, September, 1897. (E. Bartholomew, no. 2294.)

Perithecia mostly hypophyllous, superficial, membranous,

astomous, 150 μ diam., collapsing above, black, clothed, especially below, with short, spreading, continuous, brown, tapering hairs 20–40×3 μ; sporules abundant, globose or ovate, 8–14 (mostly 10–12 μ) in the longer diameter, hyaline.

HAPLOSPORELLA MICROSPORA E. & E.

On bark of dead *Quercus undulata*, Greenhorn, Col., July, 1897. (Bethel, 335.)

Perithecia minute, ovate, crowded in a black pulvinate elliptical or orbicular stroma 1–2 mm. diam., their apices slightly prominent above; sporules oblong-elliptical, subacute, 6–7×3 μ.

BOTRYODIPLODIA BETULINA Ell. & Dearness.

On birch bark, London, Canada, Aug., 1897. (Dearness, no. 2496.)

Perithecia seated on the inner bark and erumpent through the epidermis in crowded clusters of 4–10 together, or here and there solitary, depressed globose, 400–500 μ diam., with a papilliform ostiolum; sporules elliptical, slightly constricted at the septum, 15–22×10–12 μ (sec. Dearness reaching 25–30 μ long).

B. valsoides (Pk.) also on birch bark, is said to have the perithecia buried in the inner bark, with the ostiola elongated and joined in an olivaceous stroma and must be different from this.

ASCOCHYTA HANSENI E. & E.

On leaves of *Arbutus Menziesii*, Amador Co., Calif. (Geo. Hansen, no. 1507.)

Spots amphigenous, irregular, definite, 2–10 mm. diam., livid-purple above, paler and subrufous below; perithecia hypophyllous, erumpent, convex, papillate, 120–150 μ diam.; sporules oblong-cylindrical, slightly curved, brownish, obtuse, uniseptate, not constricted, occasionally 2-septate, 15–20×6 μ.

ASCOCHYTA FRASERAE E. & E. Bull. Torr. Bot. Club, 289. 1897. Specimens from Mt. Richtophen, Colo. (C. F. Baker, no. 414), have the perithecia larger, reaching nearly ½ mm. diam., and clothed around the base with a fringe of coarse short rudimentary hairs.

CAMAROSPORIUM ROSELLINIOIDES E. & E.

On dead branches of *Bigelovia* or *Gutierrezia*, Colo., June, 1897. (Bethel, no. 310 partly.)

Perithecia erumpent-superficial, scattered or subseriate in cracks

of the bark, globose, papillate, about ½mm. diam.; sporules oblong-elliptical, 12–22×8–12 μ, 3-septate with one or two of the cells divided by a longitudinal septum.

The perithecia are mostly fringed around the base with pale-brown hyphae.

CAMAROSPORIUM VETUSTUM E. & E.

On dead stems of *Artemisia borealis*, Malachite, Colo., July, 1897. (Bethel, no. 327.)

Perithecia scattered or in cespitose clusters erumpent, through cracks in the bark, hemispherical or subelongated, papillate, ½–¾mm. diam.; sporules 12–20×8–12 μ, 3-septate, with a longitudinal septum running through one or all of the cells. The smaller sporules are regularly elliptical or subglobose and not constricted; the larger ones more irregular in shape and often constricted in the middle.

Apparently near *C. subfenestratum* B. & C.

DICHOMERA JUGLANDIS E. & E.

On dead limbs of *Juglans cinerea*, Ohio (Morgan).

Stromata densely gregarious, flat, black, suborbicular, about 1 mm. diam., closely surrounded by the appressed lobes of the ruptured epidermis; perithecia monostichous, small (100–120 μ), entirely buried in the stroma; sporules globose, cruciate-septate or ovate, 10–12×7–8 μ, 2–3-septate and muriform, brown.

Associated with *Diaporthe bicincta* (C. & P.).

SEPTORIA ANGUSTIFOLIA E. & E.

On leaves of *Kalmia angustifolia*, Newfield, N. J. Erroneously issued in N. A. F. 2661 as *Septoria Kalmiaecola* (Schw.) B. & C. See Proc. Acad. Nat. Sci. Phil. 1893: 454. 1893.

Spots suborbicular, rusty-brown, with a slightly raised border, 2–3 mm. diam., paler below; perithecia epiphyllous, minute, scattered, not numerous; sporules filiform, curved, septulate and nucleolate, 25–45×2–2½ μ.

SCHIZOTHYRELLA FRAXINI E. & E.

On fallen leaves of *Fraxinus viridis*, Rooks County, Kan., September, 1897. (Bartholomew, 2439.)

Perithecia epiphyllous, innate-erumpent, membranous, orbicular, 300–550 μ diam., for a long time closed but finally opening by an irregular slit across the summit, convex when fresh, collapsing when dry; disk dull orange; sporules cylindrical, fas-

ciculate, 80–100×3 μ, tardily separating into segments 11–13×3 μ, truncate at each end, hyaline.

CRANDALLIA Ell. & Sacc.

New genus of Leptostromaceae. Perithecia scutellate, carbonaceo-membranous, of nearly homogeneous texture, not radiate-cellular, pierced in the centre with a single minute round opening; sporules bacillary, catenulate. Has the perithecia of *Leptothyrium* with the fructification of *Schizothyrella*.

CRANDALLIA JUNCICOLA Ell. & Sacc.

On the dead stems of *Juncus Drummondii*, Cameron Pass, Larimer Co., Colo., alt., 11,300 ft., July, 1894. (Prof. C. S. Crandall).

Perithecia 400–500 μ diam., wrinkled when dry, often with a single ridge across the centre, the central opening about 5 μ diam.; sporules cylindrical, continuous, hyaline, 8–10×1½–2 μ, at first concatenate, soon separating.

This appears to be the spermogonial stage of *Duplicaria acuminata* E. & E.

GLOEOSPORIUM ERIOGONI E. & E.

On *Eriogonum umbellatum*, Gunnison, Colo., June, 1897. (Bethel 299.)

Spots indefinite, reddish-brown, 3–4 mm. diam., leaf more or less tinged with red; acervuli thickly scattered on the spots, subepidermal, punctiform, collapsing; conidia elliptical, hyaline, 8–13×5–8 μ.

GLOEOSPORIUM SPINACIAE E. & E.

On leaves of *Spinacia oleracea*, Cote d' Or, France (F. Fautrey).

Spots suborbicular, subindefinite, 2–3 mm. diam., soon confluent, occupying the greater part of the leaf which becomes of a light brown color, dead and dry; acervuli punctiform, amphigenous, but more abundant above, covered by the epidermal cells which are raised into conical pustules, pale at first but soon becoming black and resembling minute perithecia; sporules oblong, obtuse, 5–10×2–2½ μ, hyaline, continuous.

This is a very different thing from *Colletotrichum Spinaciae* Ell. & Halst., though outwardly hardly distinguishable from it On the same leaves is also a *Macrosporium*.

COLLETOTRICHUM SOLITARIUM E. & B.

On leaves of *Solidago radula*, Rooks Co., Kansas, Aug., 1897. (Bartholomew, no. 2426.)

Spots amphigenous, round, dull-white, 1–1½ mm. diam., with a narrow erect border; acervuli amphigenous but mostly hypophyllous, solitary in the centre of the spot or sometimes several smaller punctiform ones around a larger central one; bristles rather numerous, 65–75×2–3 μ, mostly a little curved; conidia fusoid-oblong, slightly curved, hyaline, subobtuse, 12–14×2½–3 μ.

CORYNEUM SAMBUCINUM E. & E.

On *Sambucus* (dead stems), Buena Vista, Colo., June, 1897. (Bethel, 315.)

Acervuli acutely elliptical, black, subcuticular, 3–4×1½–2 mm., soon erumpent, but still partly covered by the ruptured epidermis, often containing 3–4 sporiferous nuclei; conidia elliptical, slightly narrowed towards the ends, 3-septate and generally constricted at the septa, olive-brown, 35–45×15–20 μ, on stout, septate basidia 25–35×4–5 μ.

Found with *Thyronectria sambucina* E. & E., of which apparently it is the macrostylosporous stage.

DISCOMYCETES.

LACHNELLA ALBOLABRA E. & E.

On dead shoots of *Ribes prostratum*? Empire, Colo., May, 1897. (Bethel, no. 257*b*.)

Ascomata sessile, 1–1¼ mm. diam., depressed-globose and nearly closed at first, finally nearly plane, clothed with a villose-tomentose dirty olive brown coat, the incurved margin fringed with dull-white loosely interwoven, smooth septate hairs 300–400×3–4 μ; disc cup-shaped at first, livid, nearly slate-color; asci attenuate-stipitate, oblong-cylindrical, 50–55×7 μ; paraphyses wanting? sporidia mostly biseriate, clavate-oblong, hyaline, continuous, with a small nucleus at each end, 6–10×2–2½ μ.

Allied to *L. cenangioides* Ell. and *L. Meleagris* Ell., but differs from the former in its smaller sporidia and from the latter in color; differs from *L. albido-fusca* Sacc., in its cup-shaped ascomata and broader sporidia, and from *Trichopeziza leucostoma*, Rehm in its much larger size.

LACHNELLA SYMPHORICARPI E. & E.

On dead stems of *Symphoricarpus*, Baldwin, Colorado, June, 1897. (Bethel, no. 274*b*.)

Gregarious, sessile, ¾–1½ mm. diam., at first globose, then expanding to shallow cup-shaped, with the short-fimbriate margin narrowly incurved, outside dark brown, appressed-hirsute, when dry the opposite margins are incurved in a hysteriiform manner; the substance of the ascoma is carnose-coriaceous; disk concave, dull white with a distinct rosy tint; asci clavate-cylindrical, 40–45 ×6–7 μ; paraphyses stout, cylindrical, about as long as the asci, scarcely thickened at the tips; sporidia biseriate, allantoid, hyaline, continuous, moderately curved, 8–10×1½ μ.

CENANGIUM ALPINUM E. & E.

On decorticated limbs of *Abies*, San Juan Mts., Colo., alt. 10,000 ft., July, 1897. (Bethel, no. 348.)

Ascomata scattered, erumpent, black, ¾–1 mm. diam., closed at first, then with a small round opening, margin permanently incurved, fimbriate, disk dull white, urceolate; asci closely packed, cylindrical, sessile, 50–55×6–7 μ; paraphyses filiform, not thickened at the tips; sporidia subbiseriate, allantoid, hyaline, slightly curved, 2–3-nucleate, 10–14×2½ μ.

C. laricinum (Pass.) has asci and sporidia broader.

CENANGIUM AUREUM E. & E.

On dead stems of *Ceanothus velutinus* Dougl., mountains bordering Bear Valley, Colo., July 13, 1897, alt. 7000 ft. (Prof. C. S. Crandall, no. 12.)

Erumpent, mostly through transverse cracks in the bark, solitary or 2–3 together; ascoma golden yellow, shallow cup-shaped, 2–3 mm. across, floccose-furfuraceous becoming nearly glabrous, the paler subfimbriate-floccose incurved margin more tardily so; stipe short, stout, 1 mm. long; asci clavate-cylindrical, 90–110 ×7–8 μ, 8-spored, gradually narrowed toward the base; paraphyses filiform, about as long as the asci, scarcely thickened above; sporidia uniseriate, ovate or pyriform, continuous, hyaline, 7–10× 3½ μ. The hymenium is a little paler than the outside of the ascoma.

Allied to *C. rubiginellum* Sacc. (*C. rubiginosum* Cke.).

ERINELLA CERVINA E. & E.

On decaying birch limbs, Dillon, Colo., June, 1897. (Bethel, no. 288.)

Gregarious, sessile, subglobose, urceolate, ¾ mm. diam., stag-color, short-tomentose, striate above, with subfimbriate margin paler; seated on the wood and partly covered by the loosened bark, margin thin, incurved so as to leave only a small round open-

ing; disk pallid; asci cylindrical, short-stipitate, paraphysate, 8-spored, 75–85×7–9 μ; sporidia fasciculate, acicular, hyaline, attenuated towards each end, continuous, faintly nucleolate, 50–60×2–2½ μ; paraphyses stout, rather longer than the asci, 2–2½ μ thick, tips scarcely swollen but slightly undulate or bent.

Resembles overgrown *Solenia anomala* Hoff.

CRYPTODISCUS ANDERSONI E. & E.

On dead stipes of *Pteris aquilina*, Newfield, N. J., May 10, 1890. (F. W. Anderson.)

Ascomata pale flesh-color, elliptical, ½ mm. long, covered by the epidermis which is soon split with an acutely elliptical slit exposing the hymenium; asci clavate-cylindrical, 27–30×4 μ, sessile, 8-spored; paraphyses filiform, subramose at the tips and bearing subglobose hyaline conidia 2 μ diam.; sporidia biseriate, fusoid-cylindrical, 3-septate, 11–14×1½–2 μ.

STICTIS SERPENTARIA E. & E.

On decorticated *Salix*, Mt. Paddo, Wash., alt., 7,000 ft., September, 1894. (W. N. Suksdorf, no. 481.)

Ascomata erumpent, orbicular or elliptical, 1–2 mm. in the longer diam., cinereous-gray inside, disk slate-color, suburceolate, margin gray, dentate-lobed, revolute; asci cylindrical, subsessile, 300–350×15 μ; paraphyses filiform, scarcely thickened, but slightly colored at the tips; sporidia 8 in an ascus, fusoid-cylindrical, multiseptate (50–60 or more), slightly constricted at the septa, nearly as long as the asci in which they lie straight and parallel, but when free, loosely coiled in a serpentine manner, 4–5 μ thick.

S. pachyspora Rehm, is on *Abies* and the ascomata are only 300–400 μ diam., with asci 220×27 μ, but the sporidia are the same as in the Washington specimens. What we here propose as *Stictis serpentaria* is certainly very near Dr. Rehm's species, differing principally in size.

SCHIZOXYLON BICOLOR E. & E.

On decorticated wood of *Salix*, Empire, Colo., May, 1897. (Bethel, 360 and 285.)

Ascomata erumpent, 1–2 mm. diam., closed at first by a thin, olive-gray membrane, then with a round opening bordered by the horizontally incurved, white pulverulent, subfimbriate margin; disk shallow-urceolate, bright orange-yellow; asci cylindrical, attenuated above, 200–250×6–8 μ, subsessile, with filiform paraphyses; sporidia filiform, nearly as long as the asci, multinucleate,

then multiseptate, involute, 1½–2 μ thick, separating into semicircular or variously curved segments 15–30 μ long.

KARSCHIA IMPRESSA E. & E.

On living stems of *Symphoricarpus*, San Juan Mountains, Colorado, July, 1897. (Bethel, no. 356.)

Ascomata superficial, gregarious, flat, thin, black, round, about ½ mm. diam., with a thin narrow margin, fringed around the base with creeping brown hairs; disk marked with minute hemispherical indentations, or papillose; asci oblong, sessile, 40–45×8–10 μ; paraphyses more or less thickened and bent at the tips, sometimes sparingly branched; sporidia ovate-oblong, uniseptate, the septum mostly nearer one end, not constricted, yellowish, 8–10×5 μ.

Near *K. patinelloides* (S. & R.).

AGYRIELLA Ell. & Everhart. n. gen.

Differs from *Agyrium* in its linear many-celled sporidia.

AGYRIELLA BETHELI E. & E.

On dead stems of *Bigelovia*, mountains of Colorado, July, 1897. (Bethel, no. 340*a*.)

Ascoma orbicular, convex-discoid, carnose-gelatinous, smoky-gray, lighter inside and around the margin, ½–¾ mm. diam., the entire under surface attached to the matrix; asci cylindrical, sessile, 120–150×10–12 μ; paraphyses filiform, 2 μ thick, sparingly branched above but not thickened at the tips; sporidia linear, 50–60 μ long, made up of a series of globose or elliptical cells about 4 μ diam. or 5–6×3½–4 μ, loosely attached to each other and easily separating even while yet in the asci.

HYPHOMYCETES.

OOSPORA HETEROSPORA E. & E.

Parasitic on *Xylaria polymorpha*, Missouri. (Demetrio, no. 402.)

Effused, thin, white. Sterile hyphae obscure or wanting; conidia oblong-cylindrical, obtuse, hyaline, 5–7×1½–2 μ, briefly concatenate, arising from a larger globose or short-elliptical, 6–8×5–6 μ, basal cell, without any distinct fertile hyphae, unless the large basal cells are to be considered as hyphae.

Differs from *O. hyalinula* Sacc. in the absence of any true fertile hyphae.

OVULARIA RHAMNIGENA E & E.

On leaves of *Rhamnus tomentella*, Ashland, Oregon, June, 1895. (Dr. J. J. Davis, no. 956.)

Spots amphigenous, 1–2 mm. diam.; suborbicular, rusty brown. with a dark and mostly slightly raised border; hyphae hypophyllous, cespitose, erect, hyaline, continuous, geniculate above, simple, 35–45×3 μ; conidia narrow-elliptical, granular, hyaline, subacute below, more obtuse above, 12–20×5–7 μ, continuous in the specc. seen.

OVULARIA BULLATA E. & E.

On leaves of *Stachys bullata*, Monterey, Calif., June, 1895. (Davis, no. 9527.)

Hypophyllous, in definite patches bounded by the veinlets, the leaf on the upper side marked with rusty-brown spots opposite the fertile areas below; fertile hyphae fasciculate, simple, 10–12×3–3½ μ; conidia ovate-globose, 8–12×6–8 μ, continuous, with granular contents, hyaline, occasionally oblong-elliptical, reaching 20–22×8–10 μ.

This is distinct from *Ovularia Stachydis* Bres. in Krügers F. Sax. in the presence of the spots on the upper side of the leaf and the ovate-globose conidia. The spec. in F. Sax. have oblong conidia 12–20×3½–4 μ.

OVULARIA ? GLOBIFERA E. & E.

On leaves of *Lupinus Stiversi*, Wawona, Calif., June, 1895. (Davis, no. 951.)

Spots hypophyllous, orbicular, 4 mm. diam., yellowish with a belt of black erumpent immature perithecia around the margin and beyond this a narrow pale-yellowish aureole; the upper surface of the leaf, opposite the spots, is also stained light yellow. Tufts of hyphae hypophyllous, evenly effused, giving the central portion of the spots an olive gray color; hyphae clavate, smoky-hyaline, 20–25×4–6 μ, collected in tufts 75–80 μ across; conidia globose, 8–12 μ diam., with a thick subechinulate epispore.

The conidia somewhat resemble the spores of *Tilletia*. An anomolous species.

DIDYMARIA SYMPHORICARPI E. &. E.

On leaves of *Symphoricarpus*, Gilroy, Calif., July, 1895. (Dr. J. J. Davis.)

Spots irregular, 2–4 mm. or by confluence more, dirty brown,

margin concolorous; hyphae amphigenous but more abundant below, cespitose, hyaline, simple, continuous, 10–12×3–3½ μ; conidia terminal, ovate-elliptical, uniseptate, scarcely or but slightly constricted, hyaline, 15–22×6–9 μ.

Much resembles *Ramularia Astragali* Ell. & Holw., but is readily distinguished by its very short, almost obsolete hyphae. The *Ramularia* referred to is a true *Ramularia*, the conidia becoming finally 2–3-septate. By a mistake of the printer the hyphae in Journ. Mycol. 1: 6, are made 8–4 μ thick instead of 3–4 μ as they should have been.

Ramularia Helianthi E. & E.

On leaves of *Helianthus exilis*, Jackson, Amador Co., Calif., 1896. (Geo. Hansen, no. 1505.)

Hypophyllous on reddish- or yellowish-brown spots 2–3 mm. diam., often subconfluent, prominent below on account of the thickening of the substance of the leaf; hyphae subfasciculate, short, 10–15×3 μ, toothed above; conidia oblong-fusoid, or the shorter ones obovate, hyaline, 2–3-nucleate, subcatenulate, 10–20×3–4 μ.

Allied to *R. Heraclei.*

Ramularia Lophanthi E. & E.

On leaves of *Lophanthus scrophulariaefolius*, Yosemite, Calif., June, 1895. (Davis, no. 9511.)

Spots amphigenous, irregular, subangular and partly limited by the veinlets, rusty brown above, paler beneath, subconfluent, definite, 3–5 mm. diam.; hyphae amphigenous, but more abundant below, cespitose, simple, continuous, hyaline, 20–30×3 μ, toothed or sublobate at the apex; conidia oblong-elliptical, or fusoid-oblong, 15–30×5–7 μ, hyaline, continuous or uniseptate.

Has the general aspect of *Peronospora sordida.*

Clasterisporium sigmoideum E. & E.

On dead limbs of *Castanea*, Nuttallburg, West Va., March, 1896. (L. W. Nuttall, no. 819.)

Hyphae effused, crooked, septate at intervals of about 15 μ, forming an olive-black stratum on the bark for many cm. in extent, subcespitose, 300–400×6–7 μ; conidia broad-fusoid, sigmoid (ends curved in opposite directions), 4-(exceptionally 5-) septate and slightly constricted at the septa, intermediate cells brown, end cells hyaline, 40–70×12–15 μ, mostly subtruncate above.

HELMINTHOSPORIUM TOMATO Ell. & Barthol.

On decaying fruit of tomato, Rooks Co., Kansas, September, 1897. (E. Bartholomew, no. 2433.)

Forming definite round black patches 1½–2 cm. diam., scarcely distinguishable externally from *Macrosporium tomato* Cke.; fertile hyphae erect, olive-brown, septate, geniculate and crooked, often with 1–2 short, rudimentary, hyaline branches (rudimentary conidia)? at their tips, 40–60×3½–4 μ, arising, in part at least, from prostrate creeping threads; conidia oblong, brown, 1–3-septate, not constricted, obtuse at the ends, mostly a little curved, 15–27×8–13 μ.

The well developed erect fertile hyphae indicate *Helminthosporium* rather than *Clasterisporium*.

CLASTERISPORIUM PULVINATUM E. & E.

On dead stems of *Bigelovia* or *Gutierrezia*, Baldwin, Colo., June, 1897. (Bethel, no. 309.)

Forming pulvinate, orbicular, black flattened tufts, ½–1 mm. diam., closely embraced by the margin of the ruptured epidermis; conidia erect, sparingly branched, 12–15-septate, scarcely constricted, 100–120×12–15 μ, narrowed at intervals.

CERCOSPORELLA HELIANTHELLAE E. & E.

On leaves of *Helianthella quinquenervis*, Deep Creek Lake, Colo., August 11, 1894. (Prof. C. S. Crandall, no. 194.)

Spots light brown, irregular, subangular, subconfluent, 2–3 mm. diam.; hyphae epiphyllous, densely tufted, tufts crowded so as to form a white granular coat on the spots, 20–30×4 μ, simple or with a short rudimentary branch or nodule near the tip, or subdentate, hyaline; conidia cylindrical, hyaline, uniseptate, slightly attenuated towards the ends, 30–60×2½ μ.

CERCOSPORA MACROCHAETA E. & E.

On leaves of *Quercus chrysolepis*, Jackson, Amador County, Calif. (Geo. Hansen, no. 1334.)

Hypophyllous. Hyphae rudimentary, consisting merely of aggregations of brown cells seated on the stellate hairs scattered over the lower surface of the leaf; conidia flagelliform, clear, light brown, 100–190 μ long, the lower end for 15–20 μ in length swollen and 3–5-septate, often constricted at the septa, the upper part gradually attenuated to the subobtuse extremity, slightly curved.

Cercospora Stachydis E. & E.

On *Stachys palustris*, Ames, Iowa, June, 1895. (Coll. Geo. W. Carver; Comm. Prof. L. H. Pammel.)

Spots numerous, small, pale rust-color, 1 mm. diam., with a narrow dark border; hyphae amphigenous, cespitose, few in a tuft, slender, septate, brown, subgeniculate, mostly narrowly undulate or crisped above, 60–75×3½–4 μ; conidia not well matured and mostly still attached to the hyphae.

Has the general outward appearance of *Cylindrosporium Stachydis* Ell. J. M., 7 : 277. 1893, but is a very different thing.

Cercospora incarnata E. & E.

On leaves of *Asclepias incarnata*, Oberlin, Ohio, August, 1895. (Kelsey, no. 880.)

Amphigenous; spots orbicular, 2-3 mm. diam., dirty white with a dark border above, brown below; hyphae cespitose, short, 18–25×4 μ, entire or slightly toothed above; conidia slightly colored, attenuated and often shrivelled above, 5–10-septate, 25–60×3½–4 μ.

Cercospora Gayophyti E. & E.

On *Gayophytum diffusum*, Yosemite, Calif., June, 1895. (Dr. J. J. Davis, no. 9510.)

Spots brownish, indefinite, extending along the sides of the leaf or across the upper part, finally occupying the entire surface and killing the leaf; hyphae amphigenous, cespitose, subhyaline, continuous, simple, subdenticulate and subgeniculate above, 20–30×3½–4 μ; conidia oblong, smoky-brown, nucleate, uniseptate, 20–35×5–6 μ.

Cercospora Coleosanthi E. & E.

On *Coleosanthus Californicus*, Jackson, Amador Co., Calif. (Geo. Hansen, no. 1396.)

Spots suborbicular, grayish brown, 2–4 mm. diam., often confluent, margin narrow, darker; tufts amphigenous, thickly scattered over the spots, gray; conidia cylindrical, sub-obtuse, nucleate, 30–40×2½–3 μ, sometimes attenuated above and longer (50–60 μ).

Cercospora Tragopogonis E. & E.

On leaves of *Tragopogon porrifolius*, Emma, Mo., September 22, 1897. (Rev. C. H. Demetrio, no. 613.)

Spots suborbicular, rusty brown, and finally whitening out in the centre, 1–3 mm. diam., or by confluence more; hyphae cespitose, short, abundant, 20–30×3 μ, smoky hyaline, continuous, subundulate and obscurely toothed above; conidia clavate-cylindrical, 30–60×3 μ, 1–3-septate.

STEMPHYLIUM SUBRADIANS E. & E. Proc. Acad. Nat. Sci. Philadelphia, **1895**: 441. 1895.

Specc. on *Bigelovia* or *Gutierrezia* from Baldwin, Colo., differ from the type in the conidia varying from globose, 12–20 μ, to oblong or oblong-elliptical, 15–30×12–15 μ, this latter form of conidia being most abundant.

STIGMELLA CRATAEGI E. & E. N. A. F., 3492; F. Col., 995.

On leaves of *Crataegus parvifolia*, Newfield, N. J., Aug.–Sept 1895.

Hypophyllous. Tufts punctiform, subeffused, black; prostrate hyphae hyaline, branched, bearing the globose, elliptical, or oblong-elliptical dark olive-brown 1–3-septate and submuriform conidia on short lateral pedicils.

Outwardly resembles *Hirudinaria macrospora* Ces. on the same host (see N. A. F., 373), but is really very different.

ISARIOPSIS MEXICANA E. & E.

On dead shrubby stems, Monterey, Mexico, March, 1897. (Dr. B. F. G. Egeling.)

Hyphae simple, brown, septate at intervals of about 35 μ, loosely compacted into erect stipitiform tufts 300–400 μ high and 100 μ thick, thickly scattered over the stems and appearing like the cylindrical ostiola of some *Diaporthe*. The tips of the hyphae are paler above and recurved and swollen, developing at length into brown, multi-septate, 70–100×10–12 μ conidia.

Differs from *I. griseola* Sacc. in its septate, longer hyphae and conidia; from *I. Grayiana* Ell., in its coarser hyphae and multiseptate, much longer conidia and from *I. Linderae* E. & E., only in its habitat and much longer hyphae.

DENDRODOCHIUM COMPRESSUM E. & E.

On rotten wood, Orono, Maine. (Prof. F. L. Harvey.)

Erumpent, tuberculiform, about 1 mm. diam., light, yellow, becoming nearly amber color, soft and subgelatinous when fresh, becoming hard like horn; fertile hyphae slender, 200 μ long, 1½ μ thick, trichotomously or subverticillately branched above, branches

20–30 μ long; conidia terminal, compressed, elliptical, 4–4½×3 μ when viewed in front, 4–4½×1½ when seen edgewise.

The sporodochia resemble *Cylindrocolla*, but the structure is that of *Dendrodochium*.

HELICOSPORIUM PILOSUM E. & E.

On decaying wood, Louisiana. (Langlois, no. 2453.)

Fertile hyphae erect, simple, septate, tapering above, straight or nearly so, 200–400 μ long, 5–6 μ thick below, forming a thin grayish-black pilose coating on the surface of the wood; conidia filiform, hyaline, nucleate, forming about 3 coils which incline to straighten out, about 2½ μ thick and about 100 μ long, arising from small (3 μ), hyaline subglobose lateral tubercles on the hyphae.

Allied to *H. fuscum* Morgan, but that has the thread of the conidia thicker and a greater number of coils.

CYLINDROCOLLA BIGELOVIAE E. & E.

On dead stems of *Bigelovia*, Golden, Colorado, Jan., 1897. (Bethel, no. 177.)

Sporodochia gregarious, depressed-hemispherical or strongly convex, yellowish amber-color, ½–¾ mm. diam.; sporophores dendroidly branched, filiform, hyaline, 50–60×1 μ; conidia terminal, catenulate, cylindrical, 6–7×1¼ μ.

DENDRODOCHIUM HELOTIOIDES E. & E.

On dead bark of Kukiu tree, Sandwich Islands (Kauai), 1895. (A. A. Heller, no. 2678.)

Sporodochia seriately erumpent through cracks in the bark, crowded, subconfluent, of irregular shape, orange-yellow, finally concave-discoid, the disk deep orange, the sides whitish; sporophores sparingly branched, erect, slender, 30–40 μ long; conidia oblong-elliptical, hyaline, 5–7×2½–3½ μ.

Bears a striking resemblance to crowded forms of *Helotium citrinum* (Hedw.) Fr.

FUSARIUM ALEURINUM E. & E.

On wheat flour spilt on the ground and left exposed four months, Nuttallburg, West Va. (L. W. Nuttall.)

Sporodochia compact, subtuberculiform-effused and subconfluent, reddish-orange, mycelium white; fertil hyphae erect, much branched, branches erect; conidia terminal, fusoid, slightly curved, continuous or faintly 1–3-septate, nucleate, 35–45×2½–3 μ.

FUSARIUM OXYDENDRI E. & E.

On *Oxydendron arboreum*, Nuttallburg, West Va., March, 1896. (L. W. Nuttall, no. 827.)

Sporodochia tuberculiform, about 1 mm. diam., slate-color, subcartilaginous, truncate or concave above, erumpent through, and closely surrounded by the ruptured epidermis; hyphae branched, hyaline, nucleolate (olivaceous in the mass); conidia arcuate, nucleate, continuous (as far as seen), 40–60×2½–3 μ.

Allied to *F. Schweinitzii* Ell. & Hark, but that has conidia oblong, obtuse, 20–30×6 μ.

Notes on Plants of New Mexico.

BY A. A. HELLER.

Nine weeks of the season of 1897, or from May 10th to July 17th, were spent in northern New Mexico by Mrs. Heller and myself. We were located at Santa Fe, the bulk of the collecting being done in the vicinity of that town. In all, some two hundred and forty numbers were collected, among them a dozen or more new species, and many rare ones. Among the latter are a large number of authentic specimens of the types of Fendler's plants. Part of the collection has already been distributed, the new species bearing on their labels the names under which they will be described as soon as a full report can be published. The following notes are preliminary to this intended report:

EDWINIA nom. nov.

[JAMESIA T. & G. Fl. N. Am. 1: 593. 1840. Not Raf. 1832.]

It appears that the name given to this beautiful shrub is not tenable on account of the older *Jamesia* of Rafinesque. That the name of Edwin P. James, who did much to advance the interests of botany during the first half of the century, should be altogether dropped, does not seem fair, and with this idea in view, I assign to the genus the name *Edwinia*.

EDWINIA AMERICANA (T. & G.).

Jamesia Americana T. & G. Fl. N. Am. 1: 593. 1840.

The specimen upon which the genus was founded was imper-

fect and scanty, and the exact locality from which it was obtained is not known, but it is supposed to have come from "along the Platte or the Canadian River." Fendler re-discovered it on the "banks of Santa Fe Creek, near the water, where the stream is walled in on both sides by high rocks." It is plentiful along Santa Fe Creek in favorable situations, usually growing on rocks or on talus. No. 3710.

EDWINIA WRIGHTII (Engelm. & Gray).

Fendlera rupicola var. *Wrightii* Engelm. & Gray, Pl. Wright. 1: 77. *pl. 5. f. 2.* 1852.

The two plants figured in the plate referred to above, undoubtedly belong to different species. Our plant, no. 3513, was collected in flower at Embudo, Taos County, on the rocky banks of the Rio Grande river, on the 10th of May. It is an erect bush, four or five feet high, covered in the flowering season with an abundance of large, pink tinged flowers. The original is Wright's 228a, found in "crevices of rocks on the San Pedro river," Texas.

OXYPOLIS FENDLERI (A. Gray).

Archemora Fendleri A. Gray, Mem. Am. Acad. (II) 2: 56. 1849.

The original of this species is Fendler's no. 272, collected on "margins of Santa Fe Creek, in fertile soil." Our no. 3801 was obtained in similar situations, always growing on the very edge of the stream, or in wet, marshy places. It was first noticed at a point eight miles east of Santa Fe, and is scattered at intervals along the upper part of the stream, which rises in the mountains some twenty miles from the town.

PHLOX STANSBURYI (Torr.).

Phlox speciosa var. *Stansburyi* Torr. Bot. Mex. Bound. Surv. 145. 1859.

This species differs in a number of particulars from *Phlox longifolia*, to which it was referred by Gray, as a variety. Its geographical range is also different, as it belongs to the southwest, while *longifolia* is a northern plant. Collected on the plateau west of the Rio Grande river, at Barranca, Taos County, no. 3589. The original localities are "gravelly hills near the Organ mountains,

New Mexico; Bigelow," and "San Luis Mountain; Capt. E. K. Smith."

CONANTHUS ANGUSTIFOLIUS (A. Gray).

Nama dichotoma var. *angustifolia* A. Gray, Proc. Am. Acad. **8**: 284. 1870.

This abundantly distinct species does not in the least resemble the South American plant to which it has been referred as a variety. The original was collected by Fendler somewhere near Santa Fe, no. 644, but the exact locality is not given. Our specimens, no. 3846, were collected in a meadow nine miles east of Santa Fe. The meadow in which it was growing had evidently been under cultivation a year or two ago.

CONANTHUS HISPIDUS (A. Gray).

Nama hispida A. Gray, Proc. Am. Acad. **5**: 339. 1861.

A species found only in sandy places west and north of Santa Fe, at about 6,000 feet elevation, no. 3737.

Senecio compactus (A. Gray,) Rydberg, Mem. Torr. Club, **5**: 342. 1894.

Senecio aureus var. *compactus* A. Gray, Syn. Fl. **1**: Pt. 2, 391. 1878.

Recent writers have shown that *S. aureus* is a plant which belongs to the eastern part of the United States, and even if it were found so far west as the Rocky Mountains, the plant under consideration should not be referred to it. *S. compactus* is a much smaller, stouter plant, with thick leaves, of an entirely different shape. Specimens referable to it, were collected near Colorado Springs, Colorado, May 8th, no. 3508.

SENECIO MICRODONTUS (A. Gray).

Senecio Toluccanus var. *microdontus* A. Gray, Syn. Fl. **1**: Pt. 2, 388. 1878.

Apparently distinct from the coarsely dentate leaved Mexican species of DeCandolle. The obovate spatulate leaves are minutely serrate or entire in our specimens, no. 3648, collected in a meadow along Santa Fe creek, nine miles east of Santa Fe. Fendler's 437, collected at the same place, was referred to *S. exaltatus* by Gray.

TARAXACUM LIVIDUM (Waldst. & Kit.).

Leontodon lividus Waldst. & Kit. Pl. Rar. Hung. 2: 120. 1805.
Taraxacum palustre var. *latifolium* A. Gray, Mem. Am. Acad. (II) 2: 115. 1849.

A large flowered, broad and almost entire leaved plant which is certainly specifically distinct from the common Dandelion, if indeed it be the same as the European plant. No. 3642, collected along Santa Fe creek, nine miles east of Santa Fe, and also on the Pecos river. Fendler collected it on the "banks of Santa Fe creek."

UNIVERSITY OF MINNESOTA,
Minneapolis, Minn.

Some Cryptogams found in the Air.

BY SMITH ELY JELLIFFE.

The writer has been studying the yeasts and moulds found as contaminations upon the bacterial plates in the laboratories of the College of Physicians and Surgeons, Columbia University, New York.

These organisms have been isolated and studied in pure cultures upon Petri dishes and a list of the forms thus far found is here given. The study here recorded extends over a period of three months, January, February and March, 1897:

SACCHAROMYCETES.

Saccharomyces cerivisiae Meyen. Rare.
S. albicans Robin. Rare.
S. glutinis Fres. Common.
S. niger Marp. Rare.

MUCORINI.

Mucor racemosus Fres. Abundant.
M. circinelloides Van Tiegh. Rare.
M. spinosus Van Tiegh. Rare.
Circinella spinosa Van Tiegh. Rare.
Rhizopus nigricans Ehren. Not rare.

HYPHOMYCETES.

Oospora lactis (Fres.) Sacc. Rare.
O. porriginis (Mont. et Berk.) Sacc. Rare.
Monilia candida Bon. Rare.
M. racemosa Pers. Common.
Aspergillus repens DeBary. Common.
A. herbariorum Wiggers. Common.
Sterigmatocystis nigra Van Tiegh. Rare.
S. sulphurea ochracea Will. Common.
S. glauca Bain. Rare.
S. butyracea Bain. Rare.
Penicillium crustaceum Link. Common.
P. digitatum (Fr.) Sacc. Rare.
Botrytis.
Cephalothecium roseum Corda. Common.
Torula.
Hormodendron cladosporioides (Fres.) Sacc. Common.
Alternaria tenuis Nees. Common.
Macrosporium commune Rab. Rare.
Fusarium roseolum (Steph.) Sacc. Rare.

These forms being still under cultivation, the writer would be pleased to exchange cultures. Nutrient glycerine agar has been found to be the best medium for the majority of the forms.

231 W. 71ST ST., N. Y.,
March 27, 1897.

Botanical Notes.

Specimens of Hicoria wanted.—An examination of western *Hicoria* material has shown that the tree described in Garden and Forest* as *Hicoria pallida* Ashe is identical with the *H. glabra villosa* of Prof. Sargent,† or at most a variety of that tree, and the name should be *Hicoria villosa* (Sarg.). The tree is common in eastern Missouri, and is found as far south as northern Mexico.‡

* 10: 305.
† Silva, 8: 167.
‡ A specimen of Pringle's in the U. S. Nat. Herb. labeled *Carya myristicaeformis.*

It occurs northward to Delaware, and is to be looked for in southern New Jersey in the pine barrens. To more exactly determine the distribution of the several trees popularly known as pignuts (including *H. microcarpa* or *odorata*) I would be glad to get specimens of these trees, especially from Michigan, central New York, New Jersey, Pennsylvania and Delaware, and from all of the southwestern States.

The essential parts of a hickory specimen are vigorous twigs with well developed buds, and fruit and leaves. I will return any material sent if desired, and will determine any for persons wishing it.

W. W. Ashe.

Raleigh, N. C.

The Botanical Society of Pennsylvania.—This Society was recently instituted at the University of Pennsylvania. Under its auspices a fortnightly series of popular meetings and of scientific meetings will be held during the session, dates will be arranged for the study of plants in evening classes, while during the next Spring and Summer a course of laboratory demonstrations and field excusions will be planned, to all of which members will be freely eligible.

Programme for the First Regular meeting, Oct. 23, 1897:

1. "The Life-history of some Insects injurious to our Trees." (Illustrated by a suite of specimens presented by Mrs. C. C. Harrison.) Dr. H. C. Schmucker.

2. "Our minutest Plants." Dr. A. C. Abbott.

3. "Native and foreign Pitcher-Plants." (Illustrated by lantern slides and specimens from the garden and greenhouse.) Prof. J. M. Macfarlane.

4. "Our Forest Trees." (Illustrated by lantern slides.) Dr. J. T. Rothrock.

5. "Seaweeds from New England." (With microscopic demonstration.) Dr. Adeline F. Schively.

6. "Microscopic Photography." Prof. J. F. Macfarlane.

7. "The Micro-Lantern and Its Uses." Dr. J. W. Harshberger.

The first number of "The Plant World" was issued in October, as already announced. Three of the editors contribute articles to

this number. Mrs. Britton leads with an account of the Sword Moss, telling briefly its history, how and where it was first found fruiting, illustrating its structure, and offering specimens for study. Mr. Pollard begins a series of short papers on the Families of Flowering Plants, introduces his readers to the two divisions of the Angiosperms, and promises for the next number a study of six families of the Monocotyledons, including the pondweeds, arrowheads, and cat-tails. Prof. Knowlton gives some interesting statistics as to the sensitiveness of the sundew. The ferns of the Yosemite and the neighboring Sierras are described by S. H. Burnham, who spent seven weeks with a party of students from Stanford University collecting in this region. Mr. Clute describes collecting some sand-barren plants on the Shinnecock Hills, Long Island, noting the gregariousness and isolation of the patches of plants that find an ungenerous sustenance in this sandy region. In his editorial, Prof. Knowlton cordially welcomes all botanists and those interested in any branch of the vegetable kingdom to contribute to its pages. The notes and news, which conclude the number, furnish many items of interest. The journal is published by Willard N. Clute & Co., Binghamton, N. Y.; the subscription price is one dollar per year.

Index to recent Literature relating to American Botany.

Beal, W. J. The Botanic Garden of the Michigan Agricultural College. Gard. & For. **10**: 365. 15 S. 1897.

Britton, E. G. The Sword Moss. Plant World, **1**:1–5. *fig.* O. 1897.

Burnham, S. H. Ferns of the Yosemite and the neighboring Sierras. Plant World, **1**: 8–10. O. 1897.

Clute, W. N. Some Sand Barren Plants. Plant World, **1**: 11. O. 1897.

Crepin, F. La Question de la Priorité des Noms spécifiques envisagée au Point de Vue de Genre *Rosa*. Bull. Herb. Boiss. **5**: 129–163. Mr. 1897.

DeCandolle, C. Piperaceae Andreanae. Bull. Herb. Boiss. **5**: 696–711. Au. 1897.

Dock, M. L. The Chestnut in Bloom. Gard. & For. **10**: 372. *f. 48.* 22 S. 1897.

Douglas, T. H. The Germination of Conifer-seeds. Gard. & For. **10**: 407. 13 O. 1897.

Dewey, L. H. The eastward Migration of certain Weeds in America. Asa Gray Bull. **5**: 54. Je. 1897.

Frauchet, A. *Isopyrum* et *Coptis*: leur Distribution Géographique. Journ. de Bot. **11**: 154–158; 159–166; 187–190; 191–195; 218–226; 227–233. 1 My–16 Jl. 1897.

Garcke, A. Ueber *Abutilon erosum* Schldl. Notizblatt Königl. Bot. Gart. Berlin, **1**: 293–294. 7 Au. 1897.

Gerard, J. W. *Romneya Coulteri.* Gard. & For. **10**: 352. *f. 46.* 8 S. 1897.

Hooker, J. D. *Begonia Baumanni.* Curt. Bot. Mag. **53**: *pl. 7540.* Je. 1897.

Hooker, J. D. *Cattleya elongata.* Curt. Bot. Mag. **53**: *pl. 7543.* Jl. 1897.

Hooker, J. D. *Helianthus giganteus.* Curt. Bot. Mag. **53**: *pl. 7555.* S. 1897.

Hooker, J. D. *Helianthus tuberosus.* Curt. Bot. Mag. **53**: *pl. 7545.* Jl. 1897.

Hooker, J. D. *Laelia longipes.* Curt. Bot. Mag. **53**: *pl. 7541.* Je. 1897.

Hooker, J. D. *Scheelea Kewensis.* Curt. Bot. Mag. **53**: *pl. 7552, 7553.* S. 1897.

Hooker, J. D. *Zamia obliqua.* Curt. Bot. Mag. **53**: *pl. 7542.* Jl. 1897.

Jenman, G. S. *Selaginella humilis.* Gardn. Chron. **21**: 210. 25 S. 1897.
A new species from Trinidad.

Jenman, G. S. *Selaginella Mazaruniense.* Gardn. Chron. **21**: 210, 25 S. 1897.

Kains, M. G. Pollen-bearing *vs.* Plant Vigor. Gard. & For. **10**: 380. 29 S. 1897.

Kelsey, F. D. The Genus *Uncinula.* The Observer, **7**: 431–432, 538–540. 1896; **8**: 53–57, 144–148. 1897.

Knowlton, F. H. Sensitiveness of the Sundew. Plant World, **1**: 7. O. 1897.

Kranzlin, F. *Luddemannia Sanderiana.* Gardn. Chron. **21**: 138. 28 Au. 1897.
A new Orchid from Columbia.

Langdon, F. Swarm-spores in *Oedogonium* and *Vaucheria.* Asa Gray Bull. **5**: 4. Ja. 1897.

Lehman, F. C. *Trevoria chloris.* Gardn. Chron. **2**: 346–347. *f. 128.* 29 My. 1897.
The description of a new genus in Orchidaceae from Columbia, with one species

Lindau, G. Acanthaceae Americanae et Asiaticae novae vel minus cognitae. Bull. Herb. Boiss. **5**: 643–681. Au. 1897.

Lloyd, J. U. The California Manna. Am. Journ. Pharm. **69**: 329–338. Jl. 1897.

Loesener, T. Ueber *Ilex Paraguayensis* St. Hil. und einige andere Matepflanzen. Notizblatt Königl. Bot. Gart. Berlin, **1**: 315–319. 15 S. 1897.

Meehan, T. *Chimaphila umbellata.* Meehans' Month. **7**: *pl. 9.* S. 1897.

Meehan, T. Contributions to the Life Histories of Plants—XII. Proc. Acad. Nat. Sci. Phila. **1897**: 27. Ap. 1897.

Meehan, T. *Pentstemon barbatus.* Meehans' Month. **7**: *pl. 8.* Au. 1897.

Meehan, T. The Improving of Native Plants. Gard. & For. **10**: 359. 15 S. 1897.

Müller, C. Bryologia Guatemalensis ex collectionibus Domin. Bernouilli et Cario (1866-1878), V. Turckheim et aliorum. Bull. Herb. Boiss. **5**: 171–220. Mr. 1897.

Müller, C. Symbolae ad Bryologiam Jamaicensam. Bull. Herb. Boiss. **5**: 547–567. Jl. 1897.

Orcutt, C. R. Review of the Cactaceae. Pamphlet, pp. 21. San Diego, California. 3 Jl. 1897.

Rothrock, J. T. Tree Form and Tree Photography. Forest Leaves, **6**: 72. Au. 1897.

Sargent, C. S. *Rhus trichocarpa.* Gard. & For. **10**: 384. *f. 49.* 29 S. 1897.

Sargent, C. S., Editor. *Hydrangea paniculata.* Gard. & For. **10**: 362. *f. 47.* 15 S. 1897.

Sargent, C. S., Editor. The Forests of Alaska. Gard. & For. **10**: 379. 29 S. 1897.

Sears, F. C. Some Utah Shade Trees. Gard. & For. **10**: 356. 8 S. 1897.

Shinn, C. H. Baron Von Müller's Services to California. Gard. & For. **10**: 381. 29 S. 1897.

Trelease, W. The Swamps of southeastern Missouri. Gard. & For. **10**: 370. 22 S. 1897.

Trimble, H. Memoir of Edson Sewell Bastin. Am. Journ. Pharm. **69**: 385–391. Au. 1897.

Van Rensselaer, M. G. Wild Flowers of early September. Gard. & For. **10**: 359–361. 15 S. 1897.

White, T. Mechanical Elevation of the Roots of Trees. Asa Gray Bull. **5**: 2. Ja. 1897.

Wilson, F. Native Orchids. Asa Gray Bull. **5**: 54. Au. 1897.